COMPRESSION AND COMPRESSED INVERSION OF INTERACTION DATA

Abstract of the Disclosure

A compression technique compresses interaction data. A fast method processes the
5 compressed data without the need to first decompress the data. In one embodiment, the
compression technique is used to compress data in an interaction matrix. The interaction
matrix (such as a moment method impedance matrix) contains interaction data between
sources (e.g., basis functions or expansion functions) and testers (e.g., testing functions). The
sources are collected into groups of sources according to specified criteria. One useful criteria
10 is based on grouping sources relatively close to one another. For each group of sources, a
composite source is calculated. The testers are also collected into groups and composite
testers are calculated. The use of composite sources and composite testers to compute
couplings when the source and tester are not close to each other allows the interaction matrix
to be computed as a sparse matrix with a block format.

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